

Diabetes Tool Box

Preventing Complications

This section is designed to introduce the learner how to prevent complications of diabetes .

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This educational material was developed using information from the following sources: The American Diabetes Association, The American Association of Diabetes Educators, The American Dietetic Association, and the American Association of Clinical Endocrinologists. As with any medical information, this is not to take the place of your provider's recommendations. Be sure to consult your healthcare provider regarding your individual diabetes treatment plan.

Complications of Diabetes

What are the complications of diabetes?

Uncontrolled diabetes leads to blood vessel and nerve damage throughout the body. Diabetics can develop the following major complications:

- ⊕ Eye problems, some of which can lead to blindness
 - Changes in vision
 - Retinopathy
 - Cataracts
 - Glaucoma
 - Macular degeneration
- ⊕ Nerve damage called neuropathy
 - Loss of feeling or pain in feet and hands and other parts of the body
 - Increased or decreased sweating
 - Digestive problems such as gastroparesis
 - Impotence or erectile dysfunction
 - Loss of typical signs and symptoms of a heart attack
 - Loss of ability to recognize a low blood sugar
- ⊕ Kidney damage called nephropathy
 - Decreased kidney function
 - Kidney dialysis
 - Kidney transplant.
- ⊕ Heart disease
 - High blood pressure and high cholesterol
 - Heart attack
 - Heart failure
 - Stroke
 - Peripheral vascular disease

Other things diabetics are at risk for include the following:

- ⊕ Gum disease
 - ⊕ Lower extremity amputations
 - ⊕ Skin problems such as itching, dry skin, skin color changes
 - ⊕ Infections and illnesses such as bacterial, fungal, viral
 - ⊕ Poor healing and longer recovery times
 - ⊕ Reproductive problems
 - ⊕ High and Low blood sugars
 - ⊕ Depression
-

Blood Pressure

Why is blood pressure important to someone who has diabetes?



Diabetics have a higher rate of heart disease and other circulation problems as well as kidney disease. As a diabetic you are more likely to die of heart disease or stroke, than those without diabetes. High blood pressure also called Hypertension (HTN) can lead to these problems.

What affects my blood pressure?

Many things affect your blood pressure:

- ♥ Salt and diet
- ♥ Timing of medications
- ♥ Activity, Stress
- ♥ Smoking
- ♥ Drinking caffeine or alcoholic beverages.

Other things can affect the blood pressure reading:

- + The blood pressure monitor is not working properly
- + You may not be taking your blood pressure correctly
- + The position of blood pressure cuff may not be correct
- + Taking the blood pressure too soon after activity
- + Repeating a blood pressure check too soon
- + Talking when obtaining a blood pressure
- + Crossing your legs at the knee

How can I get my blood pressure checked between appointments?

Get your blood pressure checked locally at fire stations or senior centers. Choose one place and then use the same place every time to get your blood pressure checked. Ask your primary care provider to give you a blood pressure (BP) monitor. Keep track of your blood pressure in your diabetic logbook.

How often should I take my blood pressure?

This depends on your health condition and what your provider recommends. For routine care, 3-4 times a month at different times of the day is enough.

What should I do to get an accurate blood pressure reading?

Rest for 5 minutes before checking your blood pressure. If you haven't rested before your blood pressure check, your blood pressure may be higher. Use the comment section on the form to record the reasons you suspect your blood pressure would be up or down. Sometimes it helps to take an average of 3 readings. Always recheck very high or very low results. Note which arm and size of the cuff you use.

How can I check whether my BP monitor is accurate?

If you are having problems getting an accurate blood pressure reading, bring your BP monitor to your next provider's appointment to have it checked against the clinic blood pressure machine. Show the nurse how you take a blood pressure to see if you are doing it correctly.

What is my goal for my blood pressure?

	Optimal	Pre-HTN	Stage 1 HTN	Stage 2 HTN
Systolic	Less than 120	120-139	140-159	More than 160
Diastolic	Less than 80	80-89	90-99	More than 100

Is there anything else?

Ask your provider about the DASH diet. DASH stands for Dietary Approaches to Stop Hypertension. Also ask your provider if you need to take medication or if you need to have your medication adjusted for your blood pressure. Keep a record of your blood pressure, and pulse in your diabetic logbook.

What is a normal pulse?

A normal pulse is 60-100 and it should be regular. Check with your provider, if your pulse is higher or lower or irregular.

See the Blood Pressure Record on page 17

Cholesterol & Triglycerides

Why should I lower my cholesterol and triglycerides?

Cholesterol and Triglycerides also called Lipids are blood fats. When you have diabetes, your blood vessels are at risk of being damaged. This damage can be caused by high blood sugar, high blood pressure and high blood fats, such as cholesterol and triglycerides. You can help avoid this damage by improving your “numbers”. If you already have heart disease, this is especially important.

	Optimal	Above Optimal	Borderline High	High	Very High Risk
Total Cholesterol	Less than 200		200-239	More than 240	
Triglycerides (fat)	Less than 150		150-199	200-499	More than 500
HDL (healthy cholesterol)	More than 60		40-59	Less than 40	
LDL (lousy cholesterol)	Less than 100	100-129	130-159	160-189	More than 190

How can I lower my cholesterol and triglycerides?

- ☒ Eat a diet low in total fat, saturated or animal fat, trans fat (hydrogenated fat) and cholesterol.
- ☒ Use liquid vegetable oils instead of solid fats.
- ☒ Use skim or lowfat milk, yogurts or cheese.
- ☒ No more than 3 eggs per week.
- ☒ Avoid cream sauces and butter added to food.
- ☒ Eat more high fiber foods like oats, vegetables and legumes.
- ☒ Avoid excessive alcohol intake.
- ☒ Increase your daily physical activity under your doctor’s recommendations.
- ☒ If you need to loose weight, check with your doctor or dietitian, increase your activity, and decrease your daily intake by 250-500 calories per day. Avoid ‘crash’ diets, or diets that focus on one food group.



Cholesterol & Triglycerides, continued

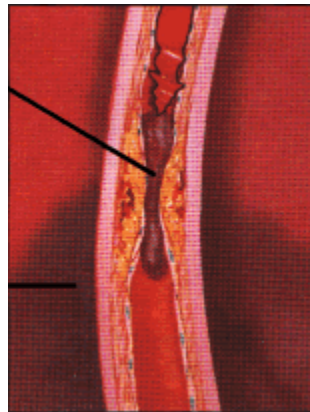
- ☑ If your provider has given you medication for your blood fats, take it as directed. Notify your provider of any side effects or problems with the medication.
- ☑ Get your fasting lipid panel done at least yearly. Do it more frequently if your provider is adjusting your cholesterol medication.

Remember: Ask your provider

- ☞ If you are at goal for your cholesterol and triglycerides.
- ☞ If you need cholesterol and/or triglyceride lowering medications.

See Instructions for Fasting Labs page 14

**Artery clogged
by cholesterol**



Stop Using Tobacco Products

Quitting smoking at any age helps your circulation, your stamina, your skin, and your general health. Your risk for heart disease is cut in half after only a year without smoking. Heart disease and stroke is the most common cause of death and disability for diabetics and very common for Pre-Diabetics. Quitting smoking also reduces the likelihood of your having an amputation, getting respiratory problems and lung cancer.

Your smoke affects others as well as yourself. Children of parents who smoke around the house are more prone to respiratory infections than children from nonsmoking homes.

Smoking is an addictive habit. Most former smokers make several attempts to quit before they are finally successful. So, never say, “I can’t.” Just keep trying.

- ⊗ Set A Quit Date when you will stop smoking
- ⊗ Throw your cigarettes away
- ⊗ Spend time with non-smokers rather than with smokers
- ⊗ Start and exercise program
- ⊗ Keep your hands busy
- ⊗ Take on new activities that don’t include smoking
- ⊗ Join quit-smoking programs
- ⊗ Consider using Nicotine gum and Nicotine patches
- ⊗ Ask your doctor for a prescription medicine to help quit smoking
- ⊗ For more information on these ideas, see the following resources
- ⊗ Ask your provider about “Stop Smoking” programs that are available

American Heart Association: 1-800-AHA-USA1 (1-800-242-8721)
<http://www.americanheart.org/>

American Lung Association: 1-800-LUNG-USA (1-800-586-4872).
<http://www.lungusa.org/>

Oregon’s Smoke Free Line 1-877-270-STOP (7867)
www.oregonquitline.org

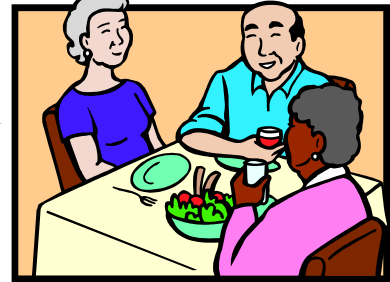


Dealing with Stress

Stress can affect your blood sugars. Stress can raise hormone levels that can in turn raise blood sugars.

Ideas and strategies for coping with stress:

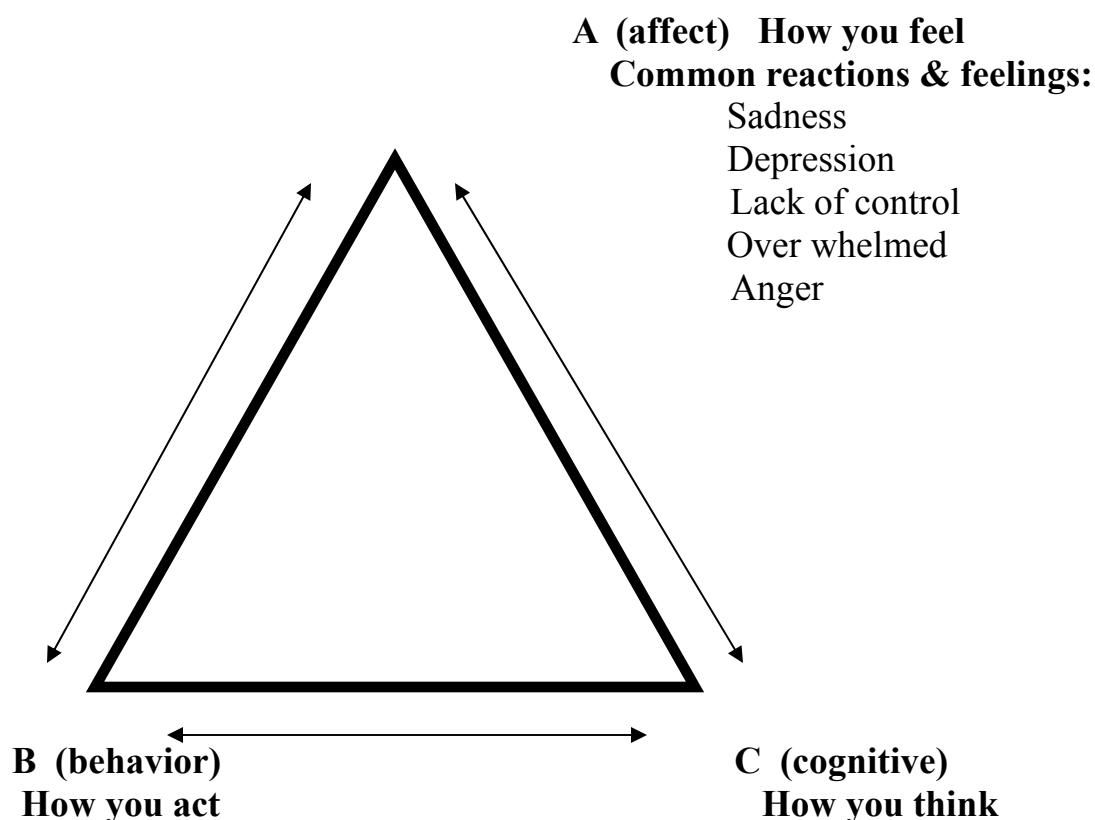
- ☺ Start off your day with breakfast.
- ☺ Avoid drinking coffee. Drink non-sugar, non-caffeinated beverages.
- ☺ Organize your daytime activities. Set priorities.
- ☺ Allow time during the day for meditation or listening to music.
- ☺ Occasionally change your routine by meeting with a friend.
- ☺ Don't try to do 2 or 3 things at a time.
- ☺ Don't try to be perfect.
- ☺ Reduce the noise level.
- ☺ Speak up about petty annoyances, while respecting other's feelings.
- ☺ Develop a support network.
- ☺ Always take a lunch break, preferably not at your desk.
- ☺ Make a goal to have: good nutrition and adequate sleep.
- ☺ Get regular exercise.
- ☺ Develop time with family, friends, and co-workers: i.e. happy hour, parties, celebrations, and other events.
- ☺ Look at unavoidable stress as an avenue for growth and change.
- ☺ Avoid people who are "stress carriers" or "negaholics."
- ☺ Don't watch the 11 PM news.
- ☺ Give yourself praise.
- ☺ Treat yourself.
- ☺ Be assertive; learn to say "no" when appropriate.
- ☺ Identify your emotional resources.
- ☺ Ask questions and ask for help.
- ☺ Allow 15 minutes of extra time to get to appointments.
- ☺ Check your breathing during the day. Take deep breaths occasionally and when you feel stressed.
- ☺ Humor is helpful. Try to find something funny in the situation.
- ☺ Find ways to protect yourself – take a "mental health day"



Remember: Call MHART – Mental Health Access Line: ext 56409

Making the Mind-Body Connection

Our mind often affects our body. How we react and feel is our affect. This is influenced by our actions and our thoughts. This triangle is an easy way to see these connections. If you want to change how you are feeling or thinking, this formula can help you. For example, if you want to change the way you react (affect) then make a change in one of the other areas on the pyramid, such as your actions (behavior), or thinking (cognition). You will be surprised at how many times this will result in a change in the just the area you are interested in.



Ineffective coping behaviors

Eat junk foods
Sit all day
Don't monitor blood sugar
Complain
Don't get out / Isolation

"My life is over"
"I'll never be able to do___again"
"I'm too old (sick, disabled etc) to do anything about this now"
"Maybe it will just go away"

See Ways to Manage Your Diabetes on page 15



HYPOGLYCEMIA









(Low Blood Sugar)

CAUSES: Too little food, too much insulin or diabetes medicine, or extra exercise.


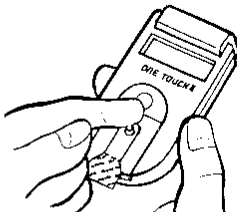

ONSET: Sudden, may progress to insulin shock.

BLOOD SUGAR: Below 70 mg/dL.
Normal range: 70-115 mg/dL.

SYMPTOMS

 SWEATING	 ANXIOUS	 DIZZINESS	 FAST HEARTBEAT
 IMPAIRED VISION	 WEAKNESS, FATIGUE	 HEADACHE	 IRRITABLE

**WHAT
CAN
YOU
DO?**

 Drink a half a cup of orange juice or milk, or eat several hard candies.	 TEST BLOOD SUGAR If symptoms don't stop, call your doctor.	 Within 30 minutes after symptoms go away, eat a light snack (half a peanut butter or meat sandwich and a half glass of milk).
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Concept developed by Rhoda Rogers, RN, BSN, CDE, Sunrise Community Health Center and Northern Colorado Medical Center
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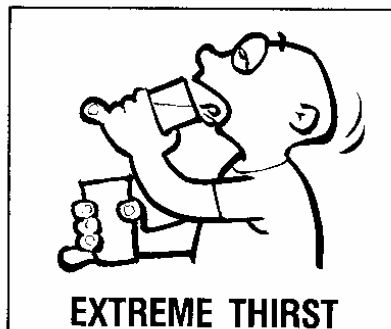
HYPERGLYCEMIA

(High Blood Sugar)

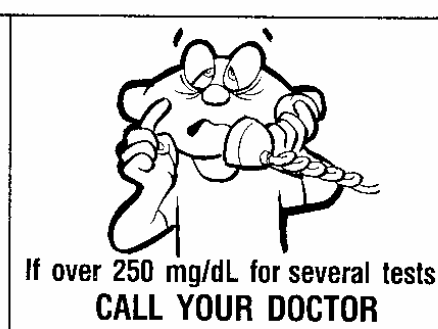
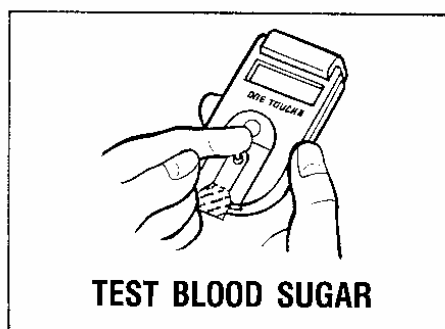
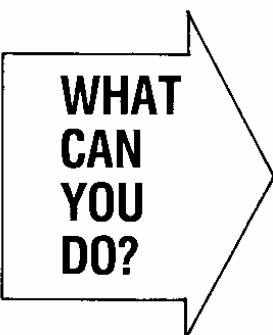
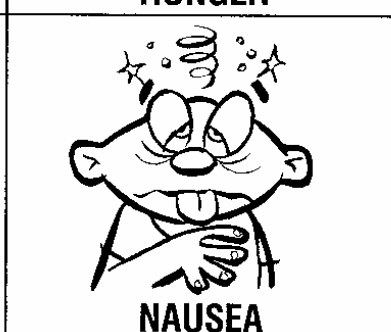
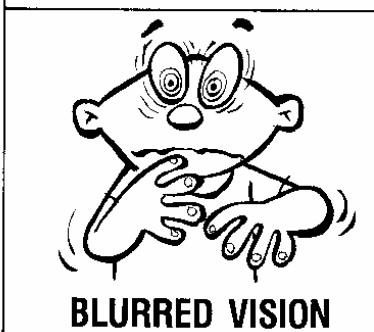
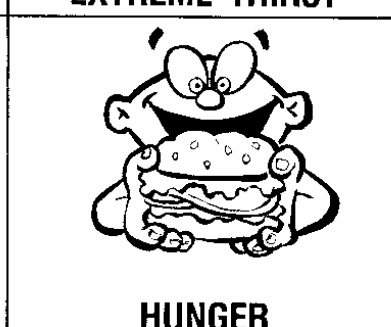
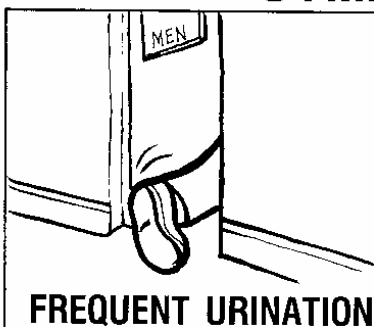
CAUSES: Too much food, too little insulin, illness or stress.

ONSET: Gradual, may progress to diabetic coma.

BLOOD SUGAR: Above 200 mg/dL.
Acceptable range: 115-200 mg/dL.



SYMPTOMS



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Sick Day Guidelines

- 📺 Do not stop taking your insulin or diabetes pills even if you are not eating.
Both stress and infection or illness increase your blood sugars
- 📺 Check your blood sugar every 4 – 6 hours
- 📺 If you have Type 1 and your sugar runs higher than 250, check your urine for ketones about every 4 hours.
- 📺 Drink clear liquids (at least 1/2 – 1 cup every hour)
- 📺 Stick to your meal plan. If you are unable to do this, see the sick day menu below. While ill try to eat at least 10 – 15 Gms of carbohydrate each hour
- 📺 Get your rest
- 📺 Monitor your weight for signs of excessive fluid loss.
- 📺 Avoid getting dehydrated which can be deadly for diabetics
- 📺 Keep a sick day record.



Contact your health care provider if:

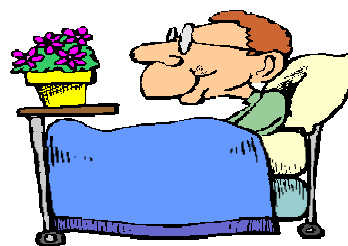
- ① You have questions
- ① Your symptoms get worse
- ① Your illness lasts longer than 24 hours
- ① If you are running moderate or large on ketones
- ① If you are on Metformin, see guidelines in Medication Section
- ① If you cannot keep your medications down and vomiting doesn't stop consider going to the ECU

Meals for sick days:

	1000-1200	1500-1800	2000-2500
	Calories	Calories	Calories
Breakfast	2 servings	3 servings	4 servings
Midmorning	2 servings	2 servings	3 servings
Lunch	3 servings	4 servings	4 servings
Mid afternoon	2 servings	2 servings	2 servings
Supper	2 servings	3 servings	4 servings
Bedtime	2 servings	2 servings	2 servings

Sick day foods

If you cannot eat your regular diabetic diet there here are some foods you might consider choosing. Each food when eaten in the stated serving size is one 1 carbohydrate serving or 15g of carbohydrate.



Juice, Liquid Item	Serving size	Soft Food Item	Serving Size
Apple Juice	1/2 cup	Saltines	6 crackers
Cranberry Juice	1/3 cup	Sherbet	1/2 cup
Orange Juice	1/2 cup	Instant Pudding	1/2 cup
Regular 7-Up™	1/2 cup	Custard	1/2 cup
Regular Gelatin	1/2 cup	Fruit Flavor Yogurt	1/2 cup
Grape Juice	1/3 cup	Cooked Cereal	1/2 cup
Gatorade™	1 cup	Ice Cream (Vanilla)	1/2 cup
Popsicle™	1 twin pop	Chicken Noodle Soup	1 cup

Remember: If you cannot keep your medications down and vomiting doesn't stop then consider going to the ECU

See the Sick Day Record on page 18

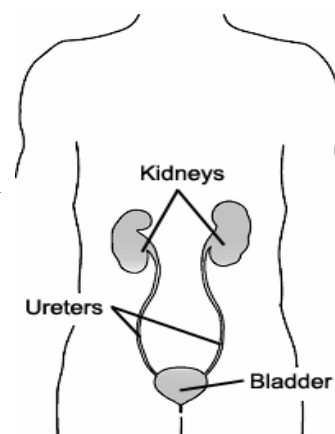
Care of Your Kidneys

What is the microalbumin test?

This test measures the amount of a protein called microalbumin in your urine.

Why is this test done?

This test is done to check for early signs of kidney damage, especially if you have diabetes.



Your kidneys filter your blood. They remove waste material from your blood to produce urine. Normally, only very tiny substances can pass through the kidneys' filters into the urine. Larger, important substances in your blood, such as proteins, normally cannot pass through these filters. As the kidneys get rid of waste products, they normally save proteins.

When the kidneys are diseased or damaged, then larger substances can pass through the filters. Microalbumin is one of the first important substances to show up in the urine at these times. For this reason, microalbumin is a good screening test for early kidney disease.

How do I prepare for this test?

No special preparation is needed for this test.

How is the test done?

A "random microalbumin" test measures the amount of microalbumin in single sample of urine. You simply urinate into the cup given in the lab. A machine in the lab then tests the sample.

A "total microalbumin" test measures the total amount of microalbumin in all of the urine your body produces in 24 hours. For a total microalbumin test, you need to collect and save all of your urine for 24 hours.

How will I get the test result?

Ask your health care provider when and how you will get the result of your test.

What does the test result mean?

When your kidneys are healthy, very little microalbumin is present in the urine. The level of microalbumin in your urine may be higher than normal because you have kidney disease or damage. The more microalbumin you have in your urine, the more severely damaged your kidneys may be.

What if my test result is not normal?

Test results are only one part of a larger picture that takes into account your medical history and current health. Sometimes a test needs to be repeated to check the first result. Or your doctor may order other tests to check your kidney function if the microalbumin is high. Talk to your health care provider about your result and ask questions.

Ask your health care provider:

- What additional tests might be needed
- What you can do to work toward getting a normal number
- When you need to be tested again

What other things can I do to protect my kidneys?

You can do the following to protect your kidneys:

- Lower your blood pressure to less than 130/80
- Lower your blood sugars to an average of less than 140
- Drink water. If you are on a restriction, check with your doctor
- Ask your provider about a medication called an ace inhibitor, such as Lisinopril



Instructions For Lab And Procedures For Diabetics

Are there different ways to prepare for a lab test?

Yes. There are two types of preparations for lab tests. There is a fasting lab test and a non-fasting lab test. Be sure you know which kind of preparation you need to do for your lab test.

What do I do for a fasting test?

1. Eat your last food or beverage (except water) by 10 p.m. the night before your appointment.
2. You may have water to drink at anytime,
3. Bring your diabetes medication (insulin or pills) to take after your blood has been drawn.
4. Unless otherwise advised, take other early morning medicines at the usual time.
5. Bring a sack breakfast or plan to buy breakfast in the canteen and bring back to the area.

What do I do for a non-fasting lab?

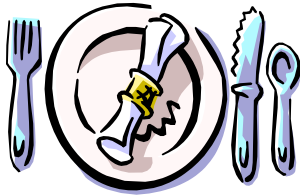
1. Eat and take your medications as usual.
2. Remember the time you finish the last meal or food before the lab is drawn.
3. Remember what food you ate.

What do I do to prepare for procedures?

1. Ask the person who is setting up the procedure what you need to do about your diabetic medications.
2. This is especially important when you need to fast for the procedure.

Remember: Please be in the clinic area by the time your regular appointment is scheduled.

Ways to Manage My Diabetes



Food



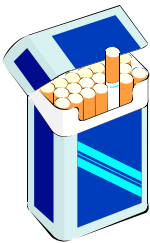
Activity



**Foot
Exams**



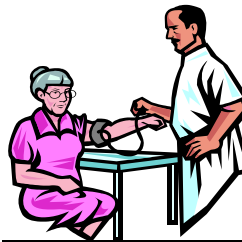
Check Sugars



Smoking



Alcohol



Check Ups



**Other
Things**

These topics are very important to your health. No patients do these perfectly. It's best to work on one at a time. You won't be pushed into changing. Which one do you want to discuss?

1. My diabetes:

A1C goal: _____ My Lipid goal: _____ My BP goal: _____

2. My specific goal is to:

3. The steps I plan to take in changing are:

Ways to Manage My Diabetes, continued

4. **Challenges that might interfere:**

5. **How I will handle these challenges:**

6. **I will know my plan is working if:**

Remember: Ask for help to identify some reasonable goals

My Blood Pressure Record

Date	Time	AM Blood Pressure	Pulse	PM Blood Pressure	Pulse	Comments

Blood Pressure Medications	Medication Dosage	Time Taken	Comments

Remember: If you are concerned about any of your numbers and need attention:
Call the VA Northwest Network Call Center 1-888-233-8305.
If you want to schedule an appointment with your PCP call: 503-220-3494.
In an emergency call 911.

My Sick Day Record

How Often	Question	Morning	Evening
Every day	How much do you weigh today?	Weight: _____	Weight: _____
Every evening	How much did you drink today?	# of glasses: _____	
Every morning and every evening	What is your temperature?	AM: _____	PM: _____
Every 4 hours or before every meal	How much diabetic medication did you take?	Time: _____	Dose: _____

Every 4 hours or before every meal	What is your blood sugar?	Time: _____	Blood Sugar: _____

Every 4 – 6 hours	How is your breathing? Other symptoms? Such as abdominal pain, vomiting?	Time: _____	Comment: _____

Every 4 hours or each time you pass urine	What is the level of ketones* in your urine?	Time: _____	Ketone Level _____

*Ketones are by-products of fat metabolism. The test is generally done by using a urine ketone test strip. This test is generally only needed if you are Type 1